



Atmospheric Deposition And Mediterranean sea water productivity (Thales - ADAMANT) An overview

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In the marine environment the salinity and biological pumps sequester atmospheric carbon dioxide. The biological pump is directly related to marine primary production which is controlled by nutrient availability mainly of iron, nitrogen and phosphorus. The Mediterranean Sea, especially the eastern basin is one of the most oligotrophic seas. The nitrogen (N) to phosphorus (P) ratio is unusually high, especially in the eastern basin (28:1) and primary production is limited by phosphorus availability. ADAMANT project contributes to new knowledge into how nutrients enter the marine environment through atmospheric deposition, how they are assimilated by organisms and how this influences carbon and nutrient fluxes. Experimental work has been combined with atmospheric and marine models. Important knowledge is obtained on nutrients deposition through mesocosm experiments on their uptake by the marine systems and their effects on the marine carbon cycle and food chain. Kinetic parameters of adsorption of acidic and organic volatile compounds in atmospheric samples of dust and marine salts are estimated in conjunction with solubility of N and P in mixtures contained in dust. Atmospheric and oceanographic models are coupled to create a system that is able to holistically simulate the effects of atmospheric deposition on the marine environment over time, beginning from the pre-industrial era until the future years (hind cast, present and forecast simulations).

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